



FOREST PEST MANAGEMENT

Pacific Southwest Region

OP

LAT 39.03303 LON -119.91222

3430 Evaluation
November 2, 1981

See evaluation filed
under Cleveland,
Descanso RD

DWARF MISTLETOE-RELATED MORTALITY OF PONDEROSA AND JEFFREY PINES AT FIVE CAMPGROUNDS IN CALIFORNIA AND NEVADA

Report No. 81-28

Detlev R. Vogler, Plant Pathologist
Forest Pest Management

Robert F. Scharpf, Research Plant Pathologist
Pacific Southwest Forest and Range Experiment Station
Berkeley, California

ABSTRACT

Western dwarf mistletoe (Arceuthobium campylopodum) can be a serious parasite of pines in campgrounds as well as in timber-producing forests. To measure dwarf mistletoe-related mortality of ponderosa and Jeffrey pines, we collected infection intensity and tree vigor data at five forested campgrounds in southern and northeastern California and on the Nevada shore of Lake Tahoe. Annual mortality over eight years was compared to mistletoe infection class, radial growth, and age at death. Overall, 7% (206) of the pines died of natural causes on all five plots. The proportion of trees killed increased with the severity of infection: by the end of the survey, 3% of the uninfected, 4% of the slightly-infected, 7% of the moderately-infected, and 22% of the severely-infected pines had died. Cambium-feeding insects, including bark beetles, pine engravers, and flatheaded borers, were involved in the deaths of all but one of the pines. More than 80% of the trees that died were slow-growing (10-year radial growth 10 mm [0.4 in] or less) and younger than 100 years of age. We discuss the differences in dwarf mistletoe intensity, stand vigor, and pattern of mortality at each of the campgrounds, and consider the implications of these results for campground management.